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**Cash Flow Trends and Their Fundamental Drivers: A Continuing Look**  
**Comprehensive Industry Review (Qtr 4, 2008)**  
**FREE CASH MARGIN INDEX:**

**2.43**

**4.12**

**5.14**

**Recession Low (Mar. 2001)**

**Current (Dec. 2008)**

**Expansion High (June, 2004)**

This research report is one of a series that looks at the cash flow performance of Corporate America. Our primary focus is on free cash margin, or free cash flow measured as a percent of revenue. We also look at the drivers or components of free cash margin in an effort to determine factors behind observed changes. In the current study we conduct a comprehensive review of 20 four-digit GICS non-financial industries and their 61 six-digit GICS sub-industries for a series of rolling twelve-month periods from the first quarter of 2000 through the fourth quarter of 2008.

Recession notwithstanding, due to declining capital expenditures and reduced working capital requirements, free cash margin held up reasonably well during the twelve months ended December 2008. The metric declined to 4.12%, down from a high of 5.14% reached in June 2004, and more recently, the 4.93% level reached in December 2007 and 4.44% in September 2008. With free cash margin at 4.12%, corporate America is generating 4.12 cents of free cash flow for every dollar of revenue generated. The number of industries experiencing declining free cash margin increased from our last report. For our sample as a whole, free cash margin last bottomed at 2.43% during the 2001 recession.

We continue to believe that during the current recession, free cash margin will likely decline to levels that are at or below those found in the 2001 recession, suggesting a continuing contraction of free cash flow of 50% or more from current levels. However, a continuing focus on maintaining low working capital levels and reduced capital expenditures may leave companies better off on a cash flow basis than they were in 2001.

Data for this research were provided by Cash Flow Analytics, LLC., [www.cashflowanalytics.com](http://www.cashflowanalytics.com).  
Charles Mulford is a principal in Cash Flow Analytics, LLC.

May, 2009

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**Georgia Tech Financial Analysis Lab**

The Georgia Tech Financial Analysis Lab conducts research on issues of financial reporting and analysis. Unbiased information is vital to effective investment decision-making. Accordingly, we think that independent research organizations, such as our own, have an important role to play in providing information to market participants.

Because our Lab is housed within a university, all of our research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Our focus is on issues that we believe will be of interest to a large segment of stock market participants. Depending on the issue, we may focus our attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in our work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. We define earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, our research may look into reporting practices that affect either earnings or cash flow, or both. At times, our research may look at stock prices generally, though from a fundamental and not technical point of view.

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## Cash Flow Trends and Their Fundamental Drivers: A Continuing Look

### Comprehensive Industry Review (Qtr 4, 2008)

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## Cash Flow Trends and Their Fundamental Drivers: A Continuing Look

### Comprehensive Industry Review (Qtr 3, 2008)

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#### FREE CASH MARGIN INDEX\*:

**2.43****4.12****5.14**

Recession Low (Mar. 2001)

Current (Dec. 2008)

Expansion High (June, 2004)

The **\*Free Cash Margin Index** is free cash flow measured as a percentage of revenue for the trailing twelve month period.

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#### Introduction

This research report is part of a continuing series of reports that examine cash flow trends and the underlying drivers that are causing changes in those trends. In the current study we conduct a comprehensive review of 20 four-digit GICS non-financial industries and their 61 six-digit GICS sub-industries for a series of rolling twelve-month periods from the first quarter of 2000 through the fourth quarter of 2008. All companies with a current market cap of \$50 million or more are included, resulting in a total sample of 3,400 companies. Please see pages 5-7 for a list of industries and sub-industries included. That list is followed by a summary of our findings. The industry reports themselves are presented in separate studies that accompany this introduction.

The objective of our research is to examine the many factors that are driving observed cash flow trends. However, we think that one cash flow metric stands out as being particularly relevant to financial performance: free cash margin. Measured as free cash flow divided by revenue, free cash margin is a cash flow profit margin. It indicates what percent of revenue is left for shareholders in the form of free and discretionary cash flow. If the company sells its products or services for a dollar, free cash margin tells us how many cents the shareholders can take home without reducing the company's ability to generate more. Thus, as we look at cash flow trends and their underlying drivers, our particular interest is on how those factors impact free cash margin.

#### Our Continuing Focus on Cash Flow

Corporate financial success is dependent not only on a company's ability to generate revenues and earnings, but also cash flow, especially free cash flow. It is free cash flow and growth in free cash flow, that discretionary stream of cash that a company can put to use for acquisitions, debt retirement, dividends and stock buybacks that works with growing earnings to drive firm

value higher. Because it is “free,” free cash flow comes with no strings attached. It is truly discretionary. Spending it does not impact the company’s ability to generate more.

A company with revenue growth will eventually lose the favor of investors if it never finds a way to generate earnings. In a similar way, a company with profits that is unable to generate cash will also experience waning investor enthusiasm. It may take a while. Investors are patient with profitable, growing companies. Ultimately, however, a company must show an ability to generate free cash flow.

Companies that consume cash must continually seek new sources of capital – whether debt or equity. At some point, those sources of capital will dry up or become prohibitively expensive if the firm does not show at least some progress toward getting closer to positive cash generation. Worse, if cash flow does not back a company’s earnings, ultimately those earnings themselves may become suspect, necessitating write-downs of the resulting non-cash assets. Net losses will likely accompany those write-downs.

### **Cash Flows During Recessions**

During periods of economic contraction, revenues and profitability decline. A company’s ability to generate cash flow declines as well. A decline in a firm’s ability to generate cash is of particular concern given the importance of cash flow to a firm’s economic well being.

When free cash margin is positive, a firm is covering all ongoing claims and is able to pay dividends, reduce debt or simply add to its cash coffers. When free cash margin turns negative, ongoing claims are not being met. Cash and short-term investments can be used to meet the shortfall. However, on-hand cash and short-term investments are not an unlimited source of funds. Firms can borrow money to meet their needs, but even if this were an option, increasing debt levels add new, unwanted risks. Equity issues provide another avenue, but capital markets are painfully dilutive when share prices are depressed by recession. Thus, free cash margin serves as an important measure of long-term financial health and one that is particularly relevant during a recession.

We think that by periodically examining their cash generating ability, we will gain insight into the overall financial health of important segments of U.S. firms such as the S&P 500, or of different industry groups. With data dating back to 2000, we will see how the cash-generating performance of these firms presently compares with their performance during the 2001 recession.

### **Cash Flow Definitions**

Free cash flow is the cash flow equivalent of the income statement “bottom line.” Like net income, free cash flow is available for shareholders after all prior claims have been satisfied. However, also like net income, which, to facilitate analysis, can be divided into certain sub-

measures of performance, like gross profit and operating profit, free cash flow can be similarly divided. Thus, while our primary focus is on free cash flow and free cash margin, or free cash flow as a percentage of revenue, we analyze here the fundamental drivers underlying two distinct, but also closely related, measures of cash flow:

1) Operating cash flow and operating cash margin - cash flow from operations after interest charges and income taxes. Operating cash margin is operating cash flow divided by revenue.

2) Free cash flow and free cash margin - cash flow available for common shareholders that can be used for such discretionary purposes as stock buybacks and dividends without affecting the firm's ability to grow and generate more. This measure is calculated as operating cash flow less preferred dividends and net capital expenditures. Free cash margin is free cash flow divided by revenue.

### **Data and Methodology**

Our data is provided by Cash Flow Analytics, LLC.<sup>1</sup> As noted, each data amount is for a rolling twelve-month period ending with the quarter end in question. For example, cash flow amounts for December 31, 2008 represent amounts for the twelve months (four quarters) ending December 31, 2008.

### **Industries**

The 20 four-digit GICS industries and 61 six-digit GICS sub-industries are as follows:

- **Energy – 1010**
  - Energy Equipment & Services – 101010
  - Oil, Gas & Consumable Fuels – 101020
- **Materials – 1510**
  - Chemicals – 151010
  - Construction Materials – 151020
  - Containers & Packaging – 151030
  - Metals & Mining – 151040
  - Paper & Forest Products – 151050
- **Capital Goods – 2010**
  - Aerospace & Defense – 201010
  - Building Products – 201020
  - Construction & Engineering – 201030
  - Electrical Equipment – 201040
  - Industrial Conglomerates – 201050
  - Machinery – 201060
  - Trading Companies & Distributors – 201070

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<sup>1</sup> Cash Flow Analytics, LLC, 1727 Malvern Place, Duluth, Georgia, 30097. [www.cashflowanalytics.com](http://www.cashflowanalytics.com). Charles Mulford is a principal in Cash Flow Analytics, LLC.

- **Commercial & Professional Services – 2020**
- Commercial Services & Supplies – 202010
- Professional Services – 202020
- **Transportation – 2030**
- Air Freight & Logistics – 203010
- Airlines – 203020
- Marine – 203030
- Road & Rail – 203040
- Transportation Infrastructure – 203050
- **Automobiles & Components – 2510**
- Auto Components – 251010
- Automobiles – 251020
- **Consumer Durables & Apparel – 2520**
- Household Durables – 252010
- Leisure Equipment & Products – 252020
- Textiles, Apparel & Luxury Goods – 252030
- **Consumer Services – 2530**
- Hotels, Restaurants & Leisure – 253010
- Diversified Consumer Services – 253020
- **Media – 2540**
- Media – 254010
- **Retailing – 2550**
- Distributors – 255010
- Internet & Catalog Retail – 255020
- Multiline Retail – 255030
- Specialty Retail – 255040
- **Food & Staples Retailing – 3010**
- Food & Staples Retailing – 301010
- **Food Beverage & Tobacco – 3020**
- Beverages – 302010
- Food Products – 302020
- Tobacco – 302030
- **Household & Personal Products – 3030**
- Household Products – 303010
- Personal Products – 303020
- **Health Care Equipment & Services – 3510**
- Health Care Equipment & Supplies – 351010
- Health Care Providers & Services – 351020
- Health Care Technology – 351030
- **Pharmaceuticals, Biotechnology & Life Sciences – 3520**
- Biotechnology – 352010
- Pharmaceuticals – 352020
- Life Sciences Tools & Services – 352030
- **Software & Services – 4510**
- Internet Software & Services – 451010
- It Services – 451020
- Software – 451030



- **Technology Hardware & Equipment - 4520**
- Communications Equipment – 452010
- Computers & Peripherals – 452020
- Electronic Equipment, Instruments & Components – 452030
- Office Electronics – 452040
- Semiconductor Equipment & Products – 452050
- **Semiconductors & Semiconductor Equipment – 4530**
- Semiconductors & Semiconductor Equipment – 453010
- **Telecommunication Services – 5010**
- Diversified Telecommunication Services – 501010
- Wireless Telecommunication Services – 501020
- **Utilities – 5510**
- Electric Utilities – 551010
- Gas Utilities – 551020
- Multi-utilities – 551030
- Water Utilities – 551040
- Independent Power Producers & Energy Traders – 551050

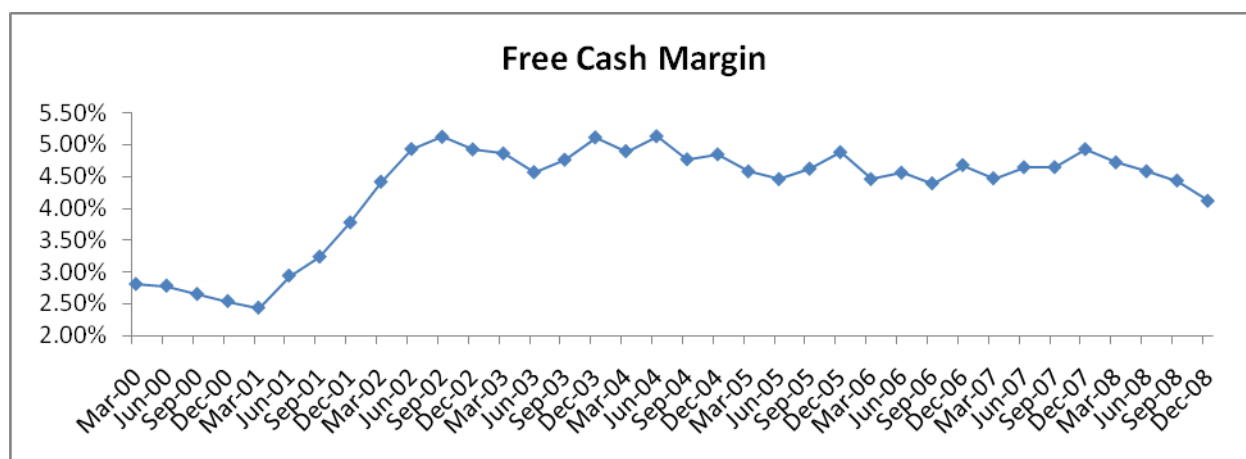
## Summary of Results

In the exhibits below we present a graph of free cash margin and three of its underlying drivers: operating cushion, capital expenditures to revenue and cash cycle, for our complete sample of companies, including all industries and sub-industries. A total of 3,400 companies are included. These summary graphs are followed with an exhibit that shows the trend in free cash margin for each of the 20 industry groups. For more details, please refer to the individual industry reports that accompany this introduction.

Recession notwithstanding, due to declining capital expenditures and reduced working capital requirements, as evidenced by a declining cash cycle, free cash margin held up reasonably well during the twelve months ended December 2008. The metric declined to 4.12%, down from a high of 5.14% reached in June 2004, and more recently, the 4.93% level reached in December 2007 and 4.44% in September 2008. With free cash margin at 4.12%, corporate America is generating 4.12 cents of free cash flow for every dollar of revenue generated. The number of industries experiencing declining free cash margin increased from our last report. For our sample as a whole, free cash margin last bottomed at 2.43% during the 2001 recession.

We continue to believe that during the current recession, free cash margin will likely decline to levels that are at or below those found in the 2001 recession, suggesting a continuing contraction of free cash flow of 50% or more from current levels. However, a continuing focus on maintaining low working capital levels along with reduced capital expenditures may leave companies better off on a cash flow basis than they were in 2001. Though lower capital spending now could hurt free cash flow later.

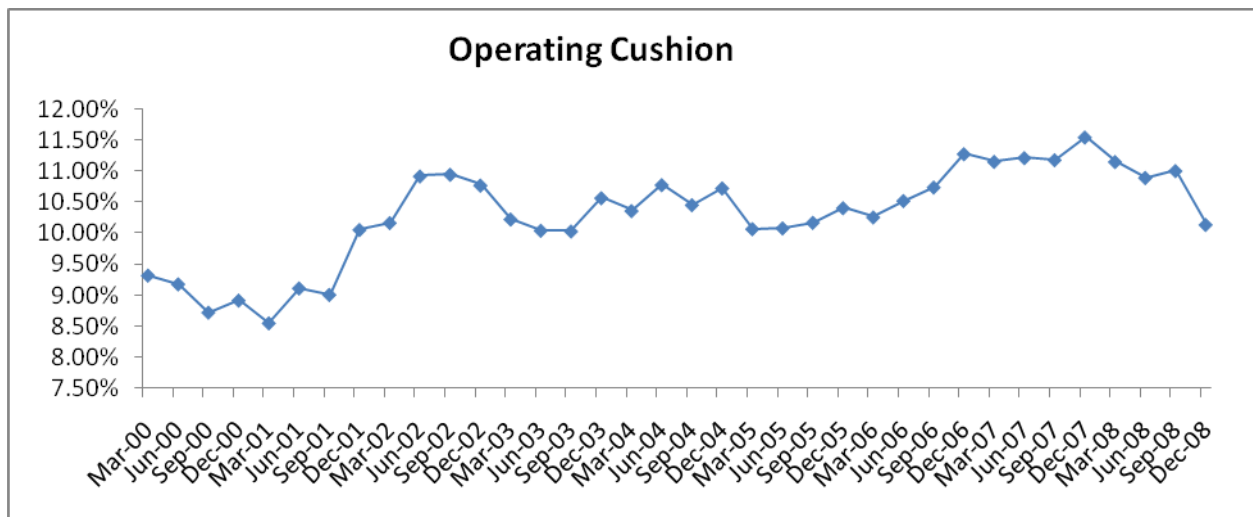
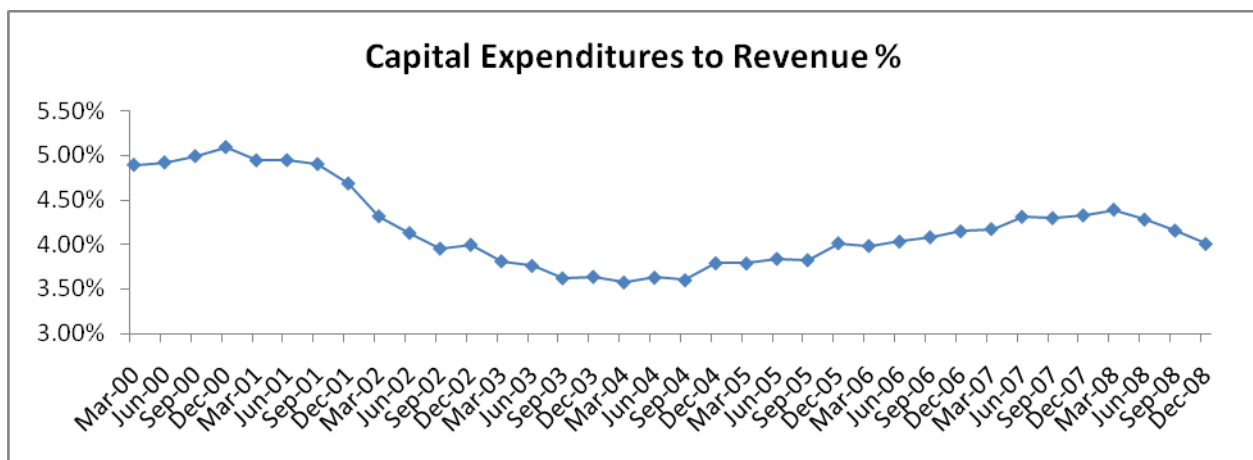
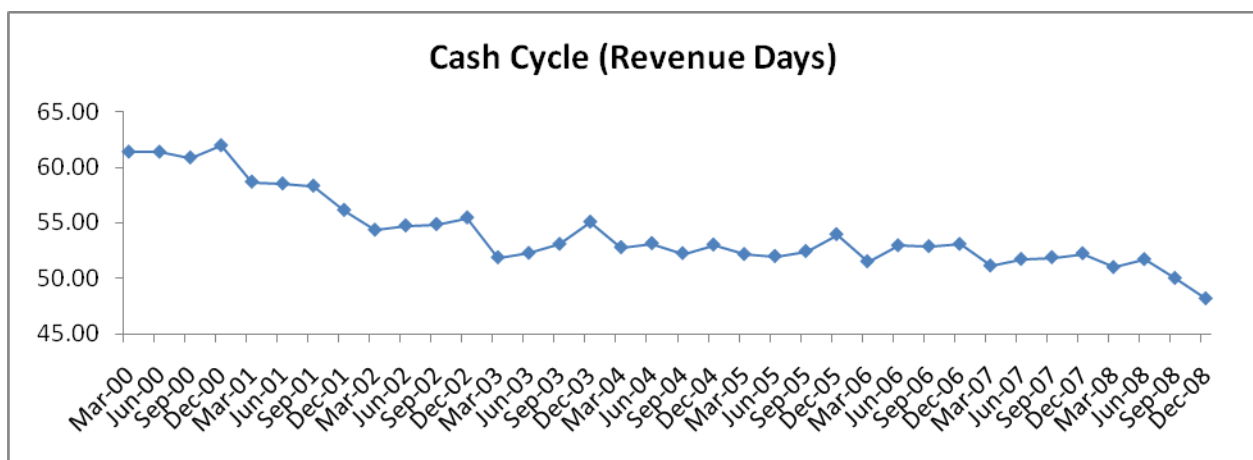


**All Industries, 2000 - 2008**

Underlying movements in free cash margin are the effects of factors that affect profitability and efficiency. On the profitability front, operating cushion measures operating profit, exclusive of the non-cash expenses, depreciation and amortization. Factors impacting operating cushion consist of gross margin (excluding depreciation and amortization), SG&A% (excluding depreciation and amortization) and R&D%. Also impacting profitability and a firm's ability to generate free cash flow, but excluded from operating cushion, is income taxes paid, which we measure as a percent of revenue. Capital expenditures do not impact directly profitability, but through depreciation. However, these expenditures are subtracted in computing free cash flow. Like operating expenses and taxes, we measure capital expenditures as a percent of revenue.

On the efficiency front, increases in receivables and inventory consume free cash flow. Increases in accounts payable provide free cash flow. The combination of receivables days plus inventory days less payables days is a firm's cash cycle. Reductions in the cash cycle provide free cash flow, while increases in the cash cycle consume free cash flow.

Below we present graphs of operating cushion, capital expenditures to revenue and cash cycle for our sample. Note that operating cushion declined markedly to 15.13% during the twelve months ended December 2008 from 16.57% in 2007. However, the impact on free cash margin of such declining profitability was muted by declining capital expenditures, which as a percent of revenue declined to 4.00% from 4.33%, and a declining cash cycle, which dropped to 48.15 days at December 2008 from 52.22 days at December 2007.

**All Industries, 2000 - 2008****All Industries, 2000 - 2008****All Industries, 2000 - 2008**

In observing the individual industry trends in free cash margin, the stability seen in the sample-wide data is not apparent for all industries studied. For example, of the 20 four-digit GICS industries studied, during the twelve months ended December 2008 when compared with the twelve months ended December 2007, we saw marginal improvement in free cash margin in two industries, relatively stable free cash margin in six industries, and declining free cash margin in twelve industries.

**Industries with improving free cash margin:**

Food and Staples Retailing (GICS 3010)

Utilities (GICS 5510)

**Industries with stable free cash margin:**

Energy (GICS 1010)

Commercial and Professional Services (GICS 2020)

Transportation (GICS 2030)

Consumer Services (GICS 2530)

Media (GICS 2540)

Retailing (GICS 2550)

**Industries with declining free cash margin:**

Materials (GICS 1510)

Capital Goods (GICS 2010)

Automobiles and Components (GICS 2510)

Consumer Durables and Apparel (GICS 2520)

Food, Beverage and Tobacco (GICS 3020)

Household and Personal Products (GICS 3030)

Healthcare Equipment and Services (GICS 3510)

Pharmaceuticals, Biotechnology and Life Sciences (GICS 3520)

Software and Services (GICS 4510)

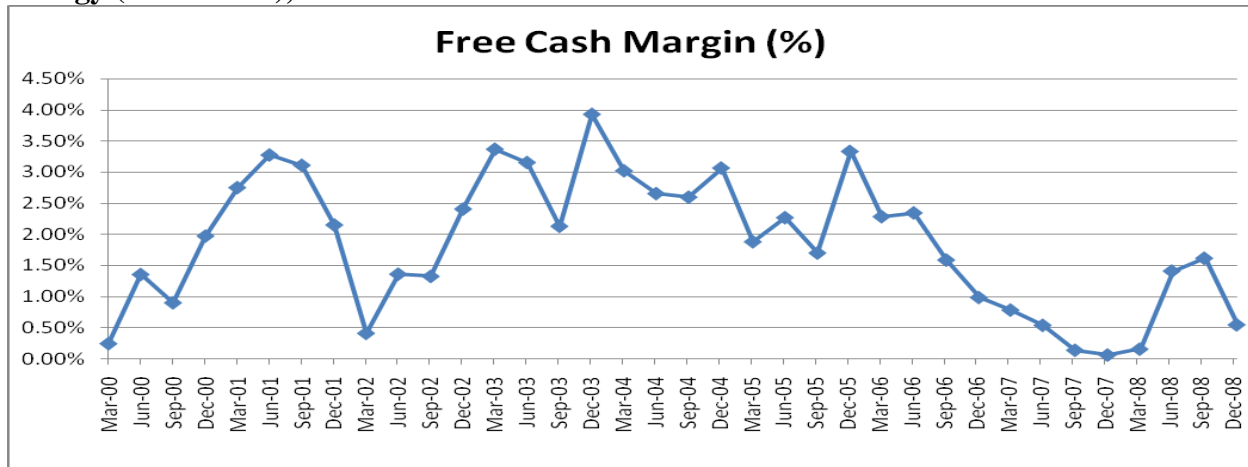
Technology Hardware and Equipment (GICS 4520)

Semiconductors and Semiconductor Equipment (GICS 4530)

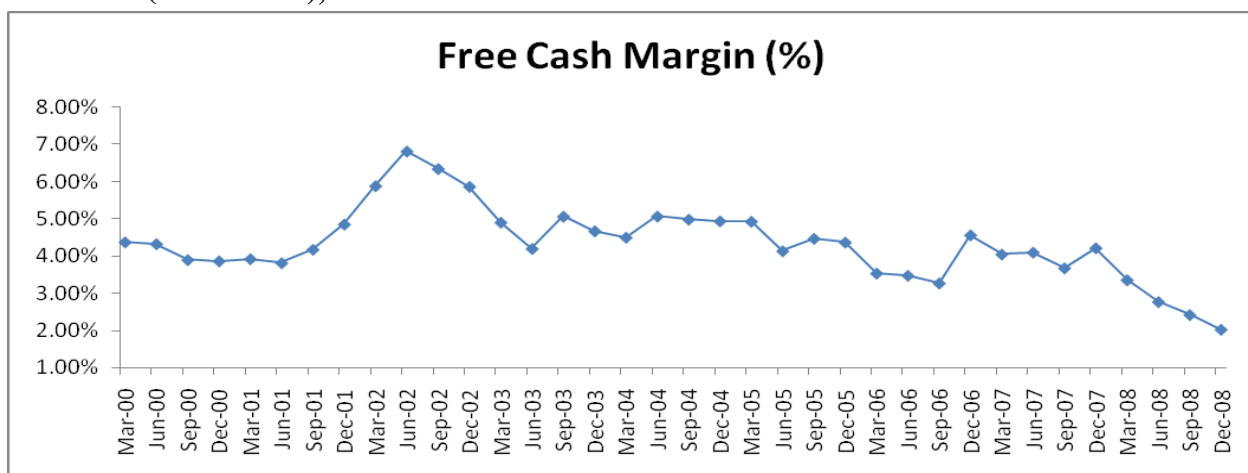
Telecommunications Services (GICS 5010)

Please refer to the individual industry exhibits that follow and to the separate industry research reports that accompany this report.

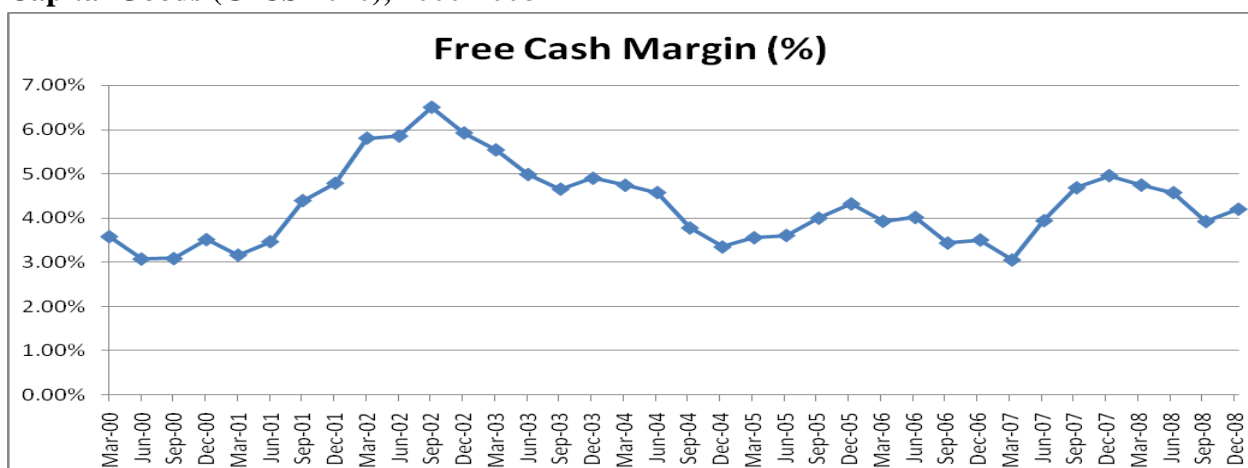
Our results show the following trends in free cash margin:

**Energy (GICS 1010), 2000 – 2008**

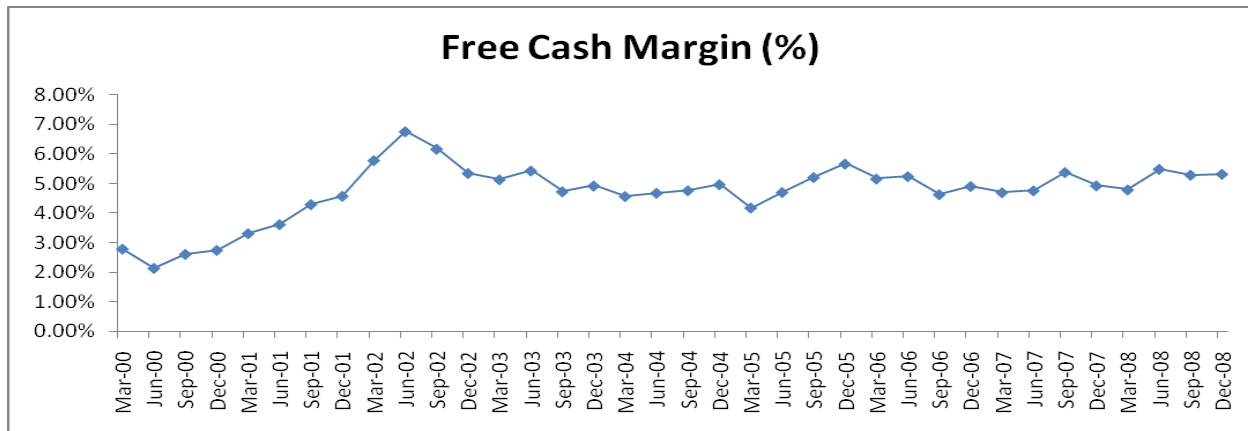
See separate report for details.

**Materials (GICS 1510), 2000 - 2008**

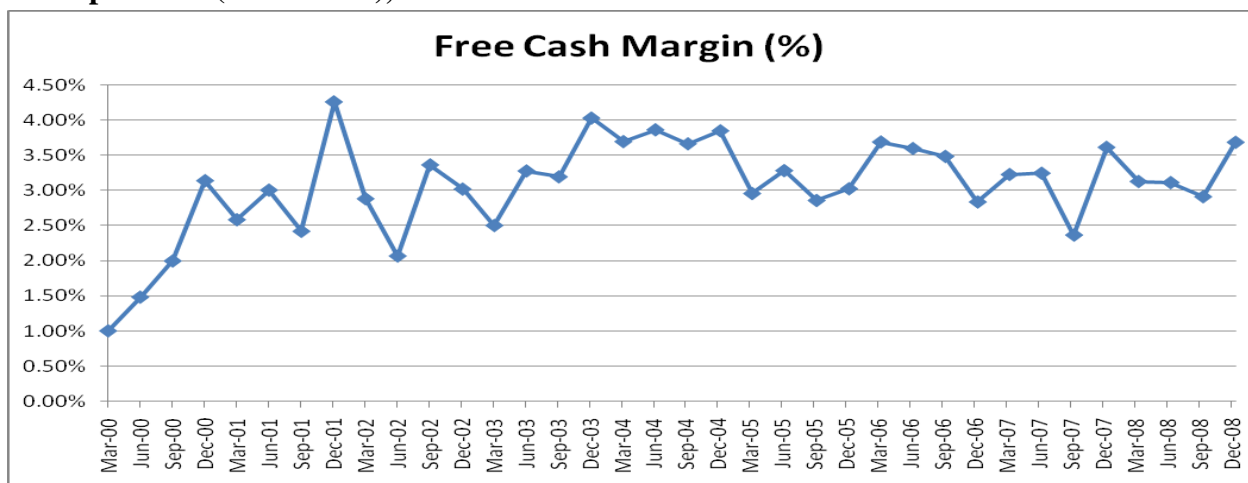
See separate report for details.

**Capital Goods (GICS 2010), 2000-2008**

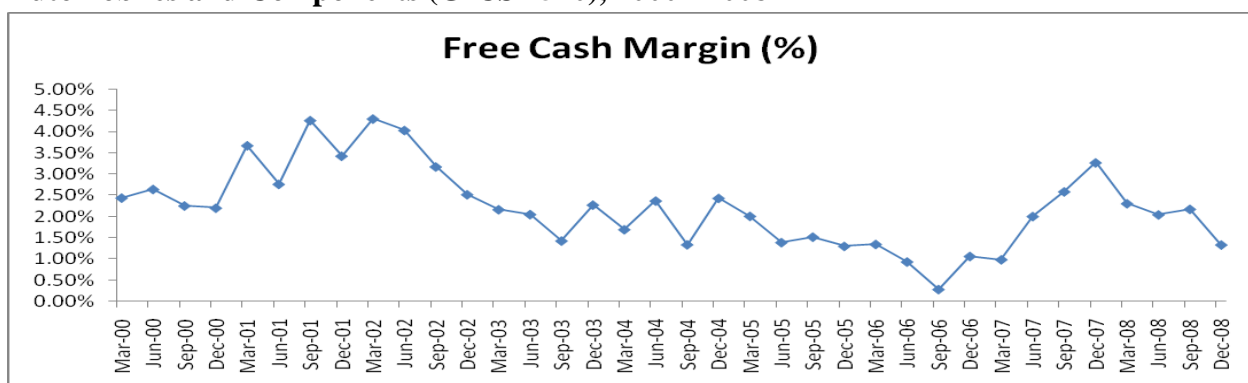
See separate report for details.

**Commercial and Professional Services (GICS 2020), 2000 - 2008**

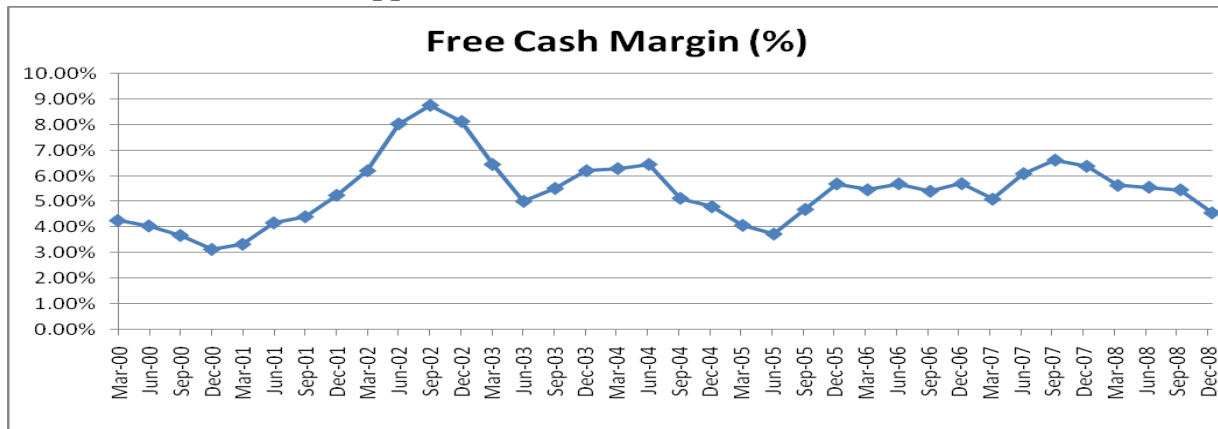
See separate report for details.

**Transportation (GICS 2030), 2000 - 2008**

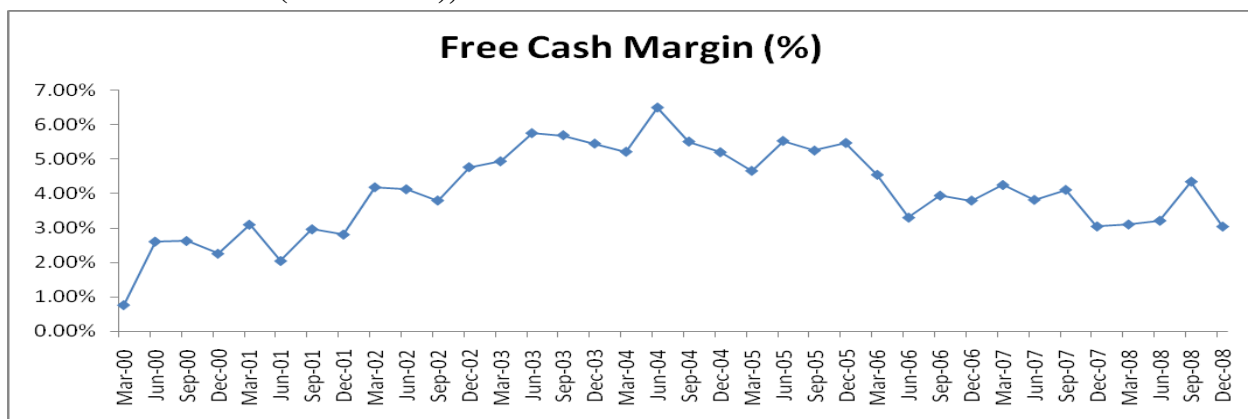
See separate report for details.

**Automobiles and Components (GICS 2510), 2000 - 2008**

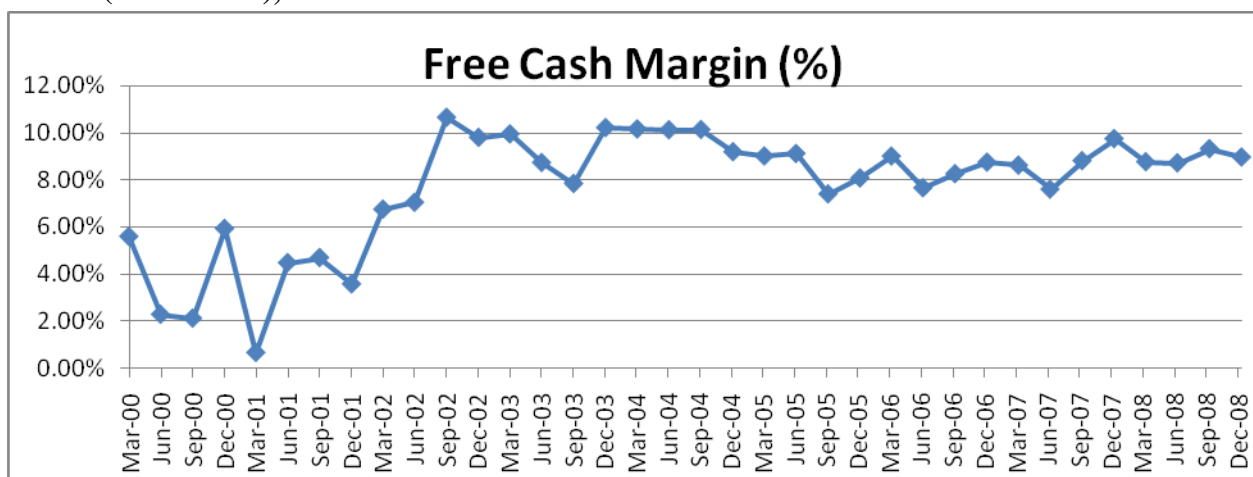
See separate report for details.

**Consumer Durables and Apparel (GICS 2520), 2000 - 2008**

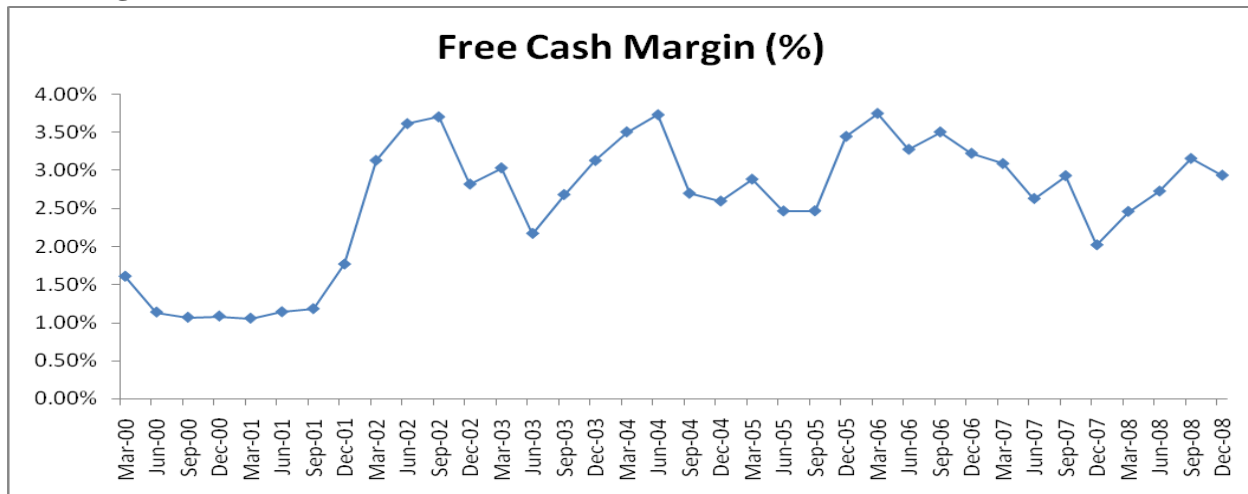
See separate report for details.

**Consumer Services (GICS 2530), 2000 - 2008**

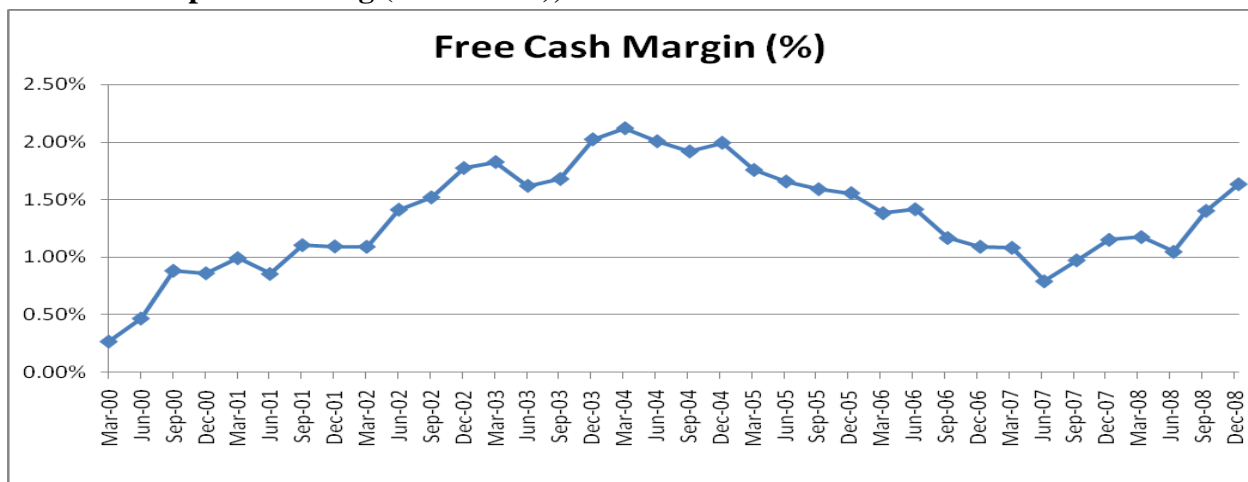
See separate report for details.

**Media (GICS 2540), 2000 - 2008**

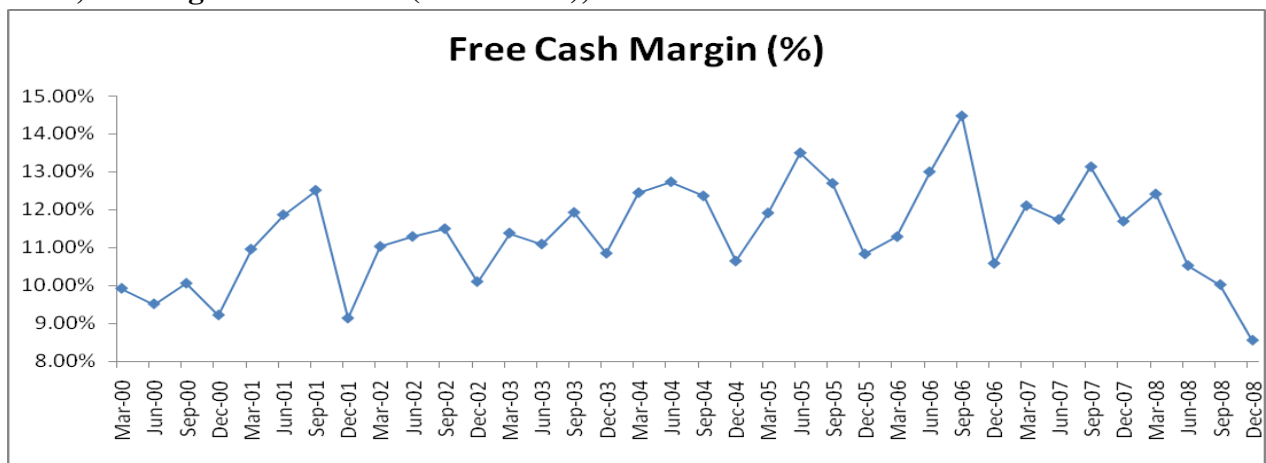
See separate report for details.

**Retailing (GICS 2550), 2000 - 2008**

See separate report for details.

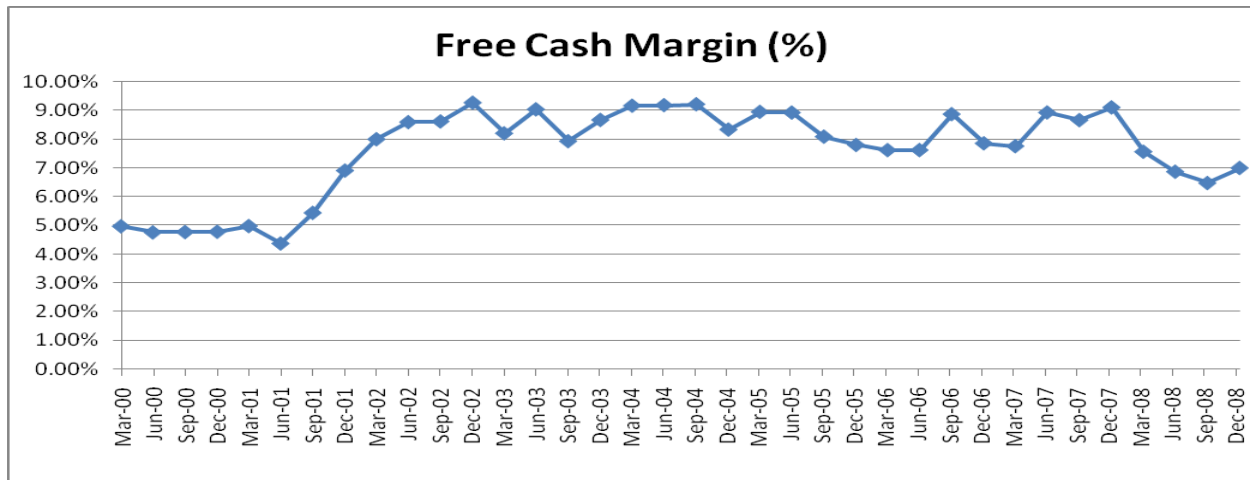
**Food and Staples Retailing (GICS 3010), 2000 - 2008**

See separate report for details.

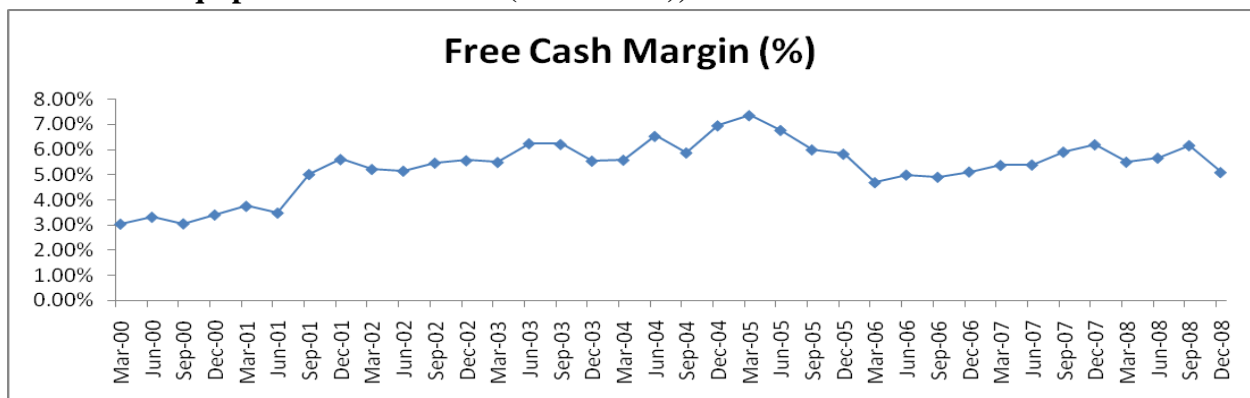
**Food, Beverage and Tobacco (GICS 3020), 2000 - 2008**

See separate report for details.

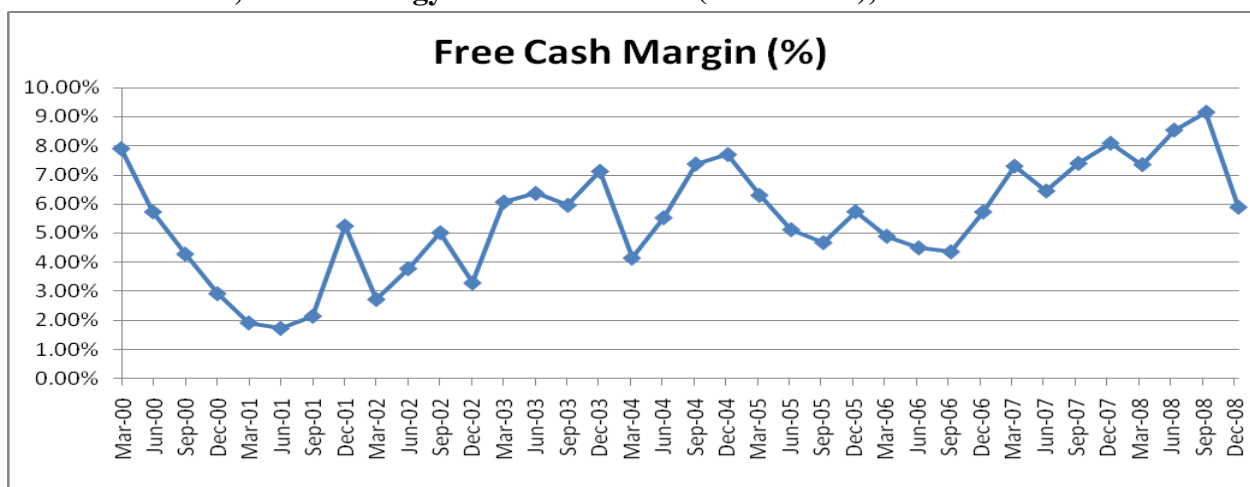


**Household and Personal Products (GICS 3030), 2000 - 2008**

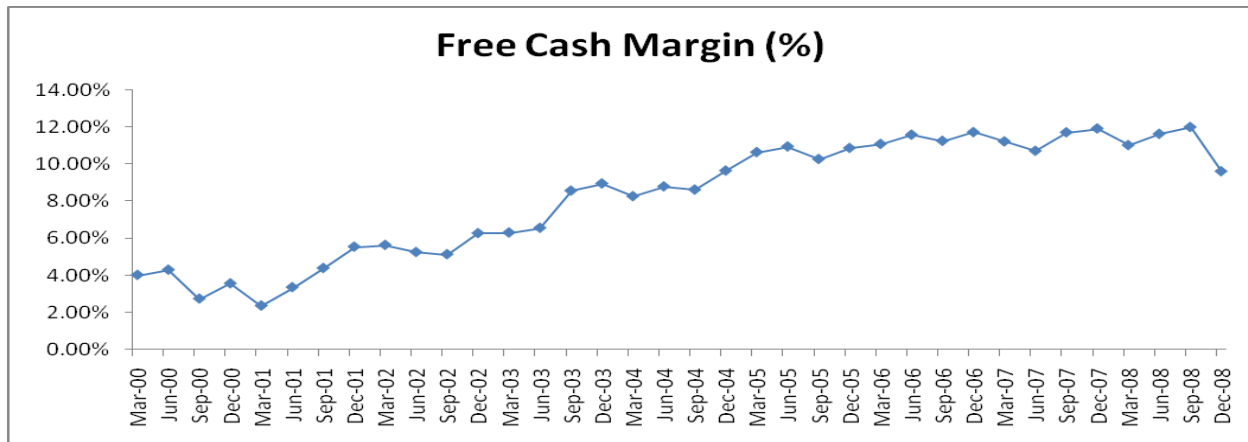
See separate report for details.

**Healthcare Equipment and Services (GICS 3510), 2000 - 2008**

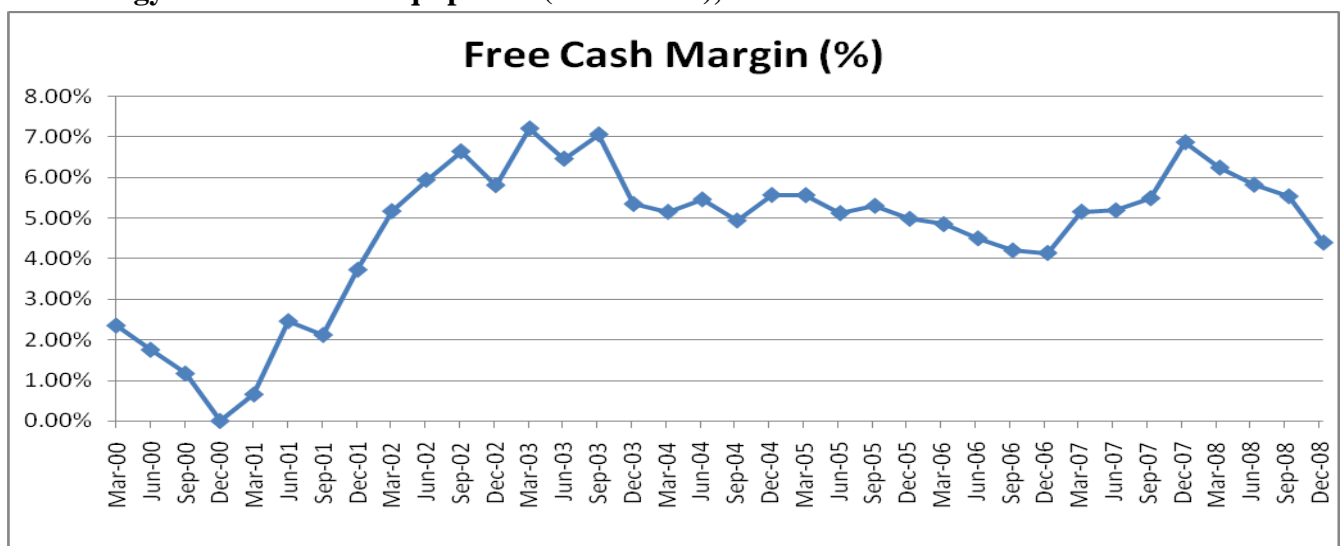
See separate report for details.

**Pharmaceuticals, Biotechnology and Life Sciences (GICS 3520), 2000 - 2008**

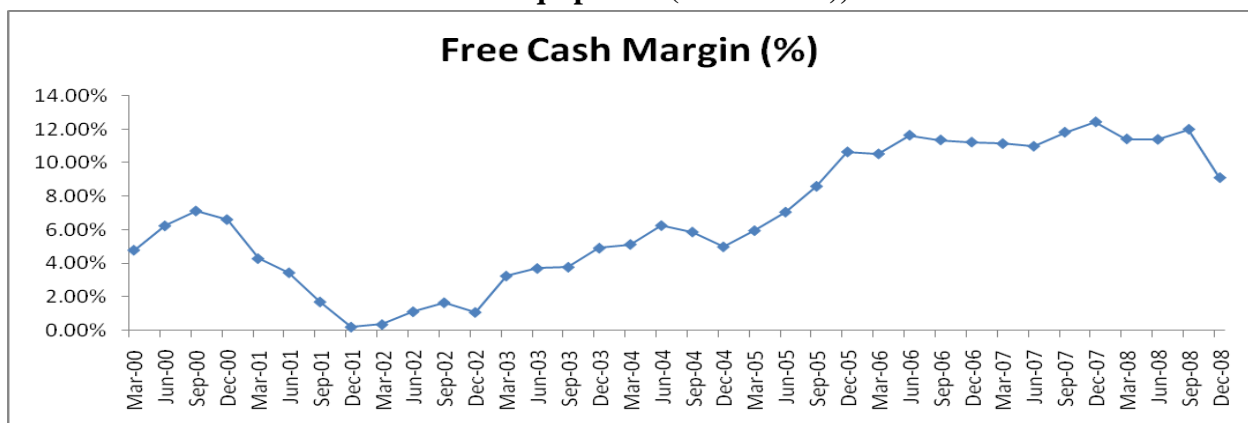
See separate report for details.

**Software and Services (GICS 4510), 2000 - 2008**

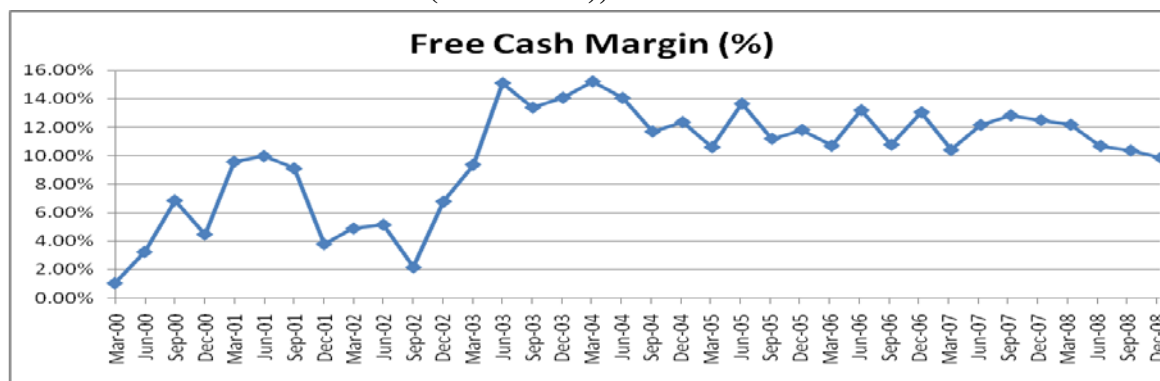
See separate report for details.

**Technology Hardware and Equipment (GICS 4520), 2000 - 2008**

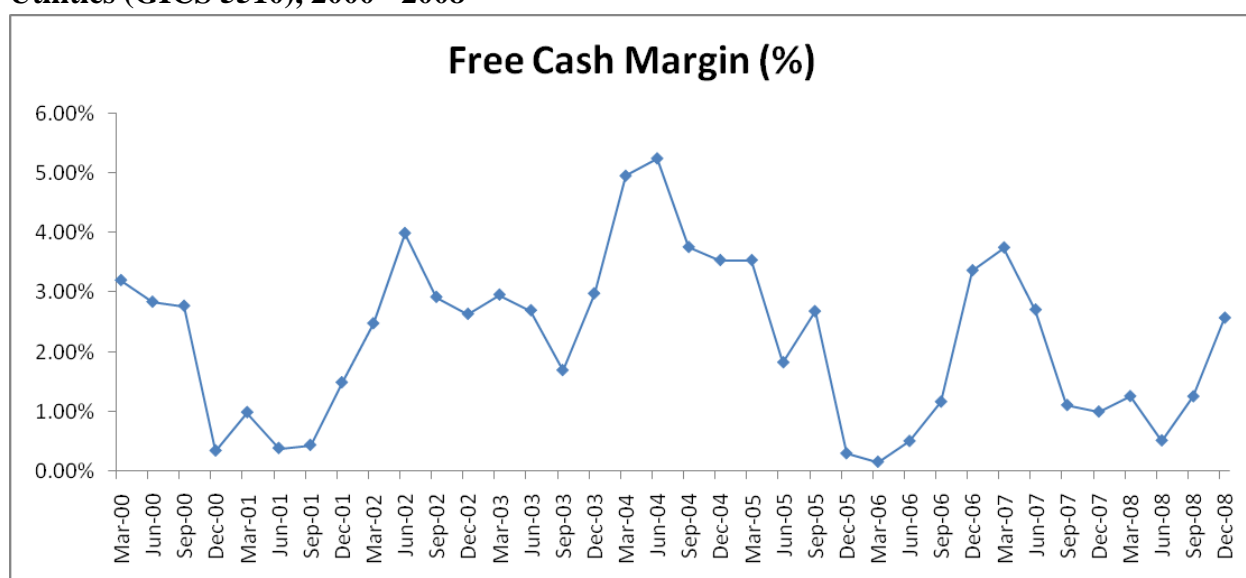
See separate report for details.

**Semiconductors and Semiconductor Equipment (GICS 4530), 2000 - 2008**

See separate report for details.

**Telecommunications Services (GICS 5010), 2000 - 2008**

See separate report for details.

**Utilities (GICS 5510), 2000 - 2008**

See separate report for details.

**The Standouts: A Closer Look**

As discussed earlier, the drivers of improvements or declines in free cash margin consist of factors that impact profitability and efficiency. On the profitability front, operating cushion measures operating profit, exclusive of the non-cash expenses, depreciation and amortization. Factors impacting operating cushion consist of gross margin (excluding depreciation and amortization), SG&A% (excluding depreciation and amortization) and R&D%. Also impacting profitability and a firm's ability to generate free cash flow, but excluded from operating cushion, is income taxes paid, which we measure as a percent of revenue. Capital expenditures do not impact profitability directly, but through depreciation. However, these expenditures are subtracted in computing free cash flow. Like operating expenses and taxes, we measure capital expenditures as a percent of revenue.

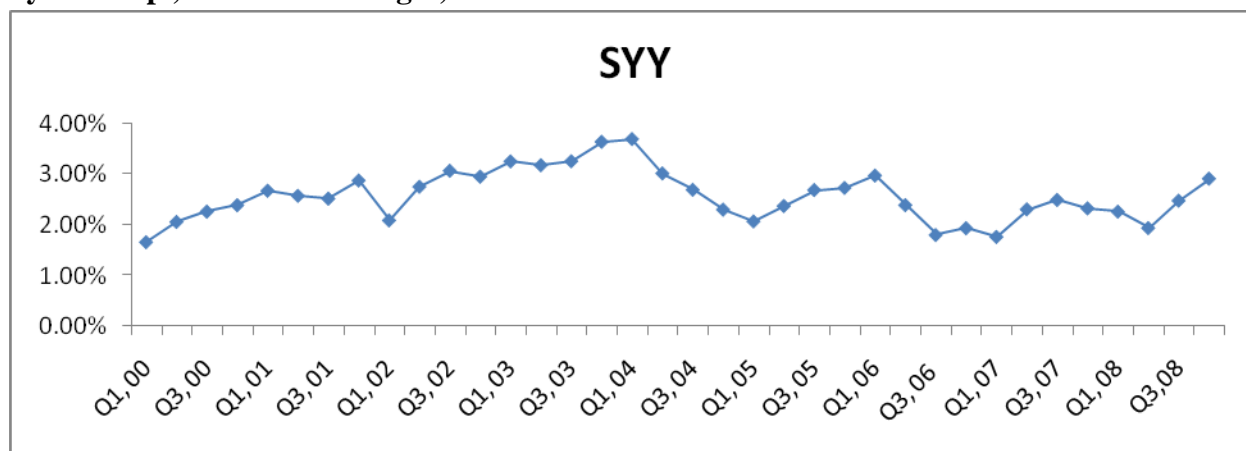
On the efficiency front, increases in receivables and inventory consume free cash flow. Increases in accounts payable provide free cash flow. The combination of receivables days plus inventory days less payables days is a firm's cash cycle. Reductions in the cash cycle provide free cash flow, while increases in the cash cycle consume free cash flow. We give consideration to all of these factors when analyzing changes in free cash margin for the standout firms discussed in this section.

### ***Improving free cash margin***

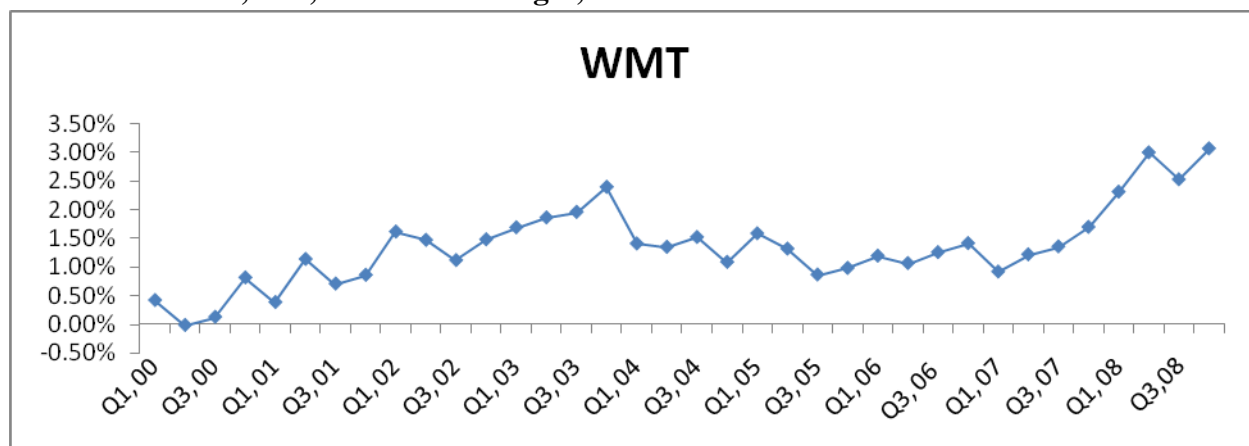
One industry that stands out with improving free cash margin is the Food and Staples Retailing industry (GICS 3010). For this group, free cash margin improved to 1.63% for the twelve months ended December 2008, up from 1.15% at December 2007. Two companies in this industry that showed particular improvement are Sysco Corp. and Wal-Mart Stores, Inc. We also saw improving fortunes in the Utilities industry (GICS 5510), where free cash margin increased to 2.57% for the twelve months ended December 2008 from 1.00% for the twelve months ended December 2007. A representative company from this group is Exelon Corp.

Graphs of free cash margin for these companies across the period studied are provided below. With each graph we also provide a short summary of the primary drivers or factors that we think were behind the observed changes in free cash margin for the selected firms. For more details regarding the industries, please refer to the separate industry research reports that accompany this report.

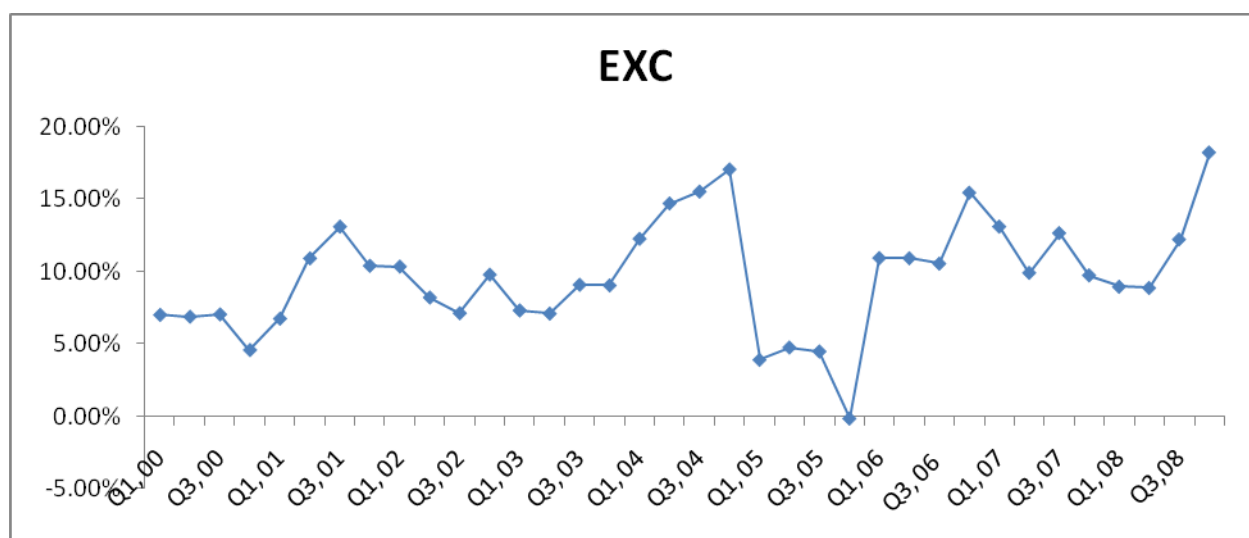
### **Sysco Corp., Free Cash Margin, 2000 – 2008**



Sysco Corp. Free cash margin improved to 2.91% for the twelve months ended December 2008 from 2.33% for the twelve months ended December 2007. Operating cushion and the cash cycle were little changed. Driving the improvement in free cash margin was a reduction in capital expenditures, to 1.34% of revenue in 2008 from 1.61% of revenue in 2007 (versus a long-term average of over 5%), and a reduction in income taxes paid to 1.41% in 2008 from 1.61% in 2007.

**Wal-Mart Stores, Inc., Free Cash Margin, 2000 – 2008**

Wal-Mart Stores, Inc. Free cash margin improved to 3.07% for the twelve months ended January 2009 from 1.70% for the twelve months ended January 2008. The company's operating cushion, income taxes paid % and cash cycle were relatively unchanged during the period ended January 2009. Driving the improvement in free cash margin was a reduction in capital expenditures. As a percentage of revenue, capital expenditures declined to 2.68% in January 2009 from 3.72% in January 2008. Historically, the company's capital expenditures % has averaged approximately 4%.

**Exelon Corp., Free Cash Margin, 2000 – 2008**

Exelon Corp. Free cash margin improved to 18.21% for the twelve months ended December 2008 from 9.73% for the twelve months ended December 2007. Operating cushion improved to 40.83% in 2008 from 36.84% in 2007, driven by an improvement in gross margin. Income taxes paid as a percentage of revenue declined. The cash cycle improved due primarily to a reduction in receivables days.

**Declining free cash margin**

Among the industries with declining free cash margin are the Food, Beverage and Tobacco group (GICS 3020), where free cash margin declined to 8.55% for the twelve months ended December 2008 from 11.69% in the December 2007 period, and the Technology Hardware and Equipment industry (GICS 4520), where free cash margin declined to 4.41% for the twelve months ended December 2008 from 6.88% for the twelve months ended December 2007. The Automobiles and Components industry (GICS 2510) also saw a difficult operating environment, where free cash margin declined to 1.33% during the December 2008 reporting period from 3.27% in 2007. Representative companies from these industries are:

Food, Beverage and Tobacco (GICS 3020):

Conagra Foods, Inc.

Tyson Foods, Inc.

Technology Hardware and Equipment (GICS 4520):

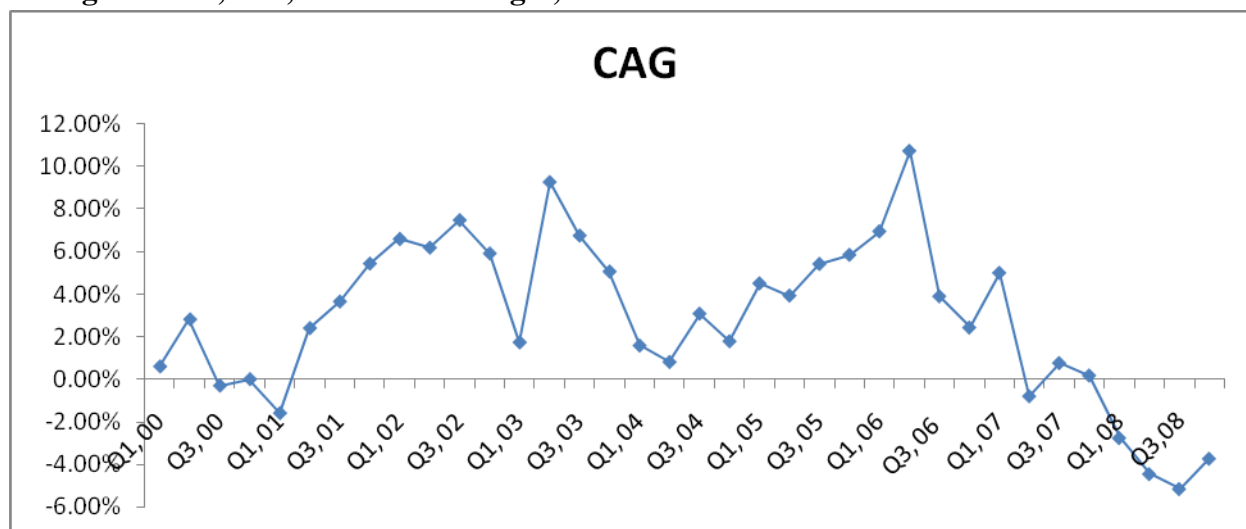
Motorola, Inc.

Sandisk Corp.

Automobiles and Components (GICS 2510):

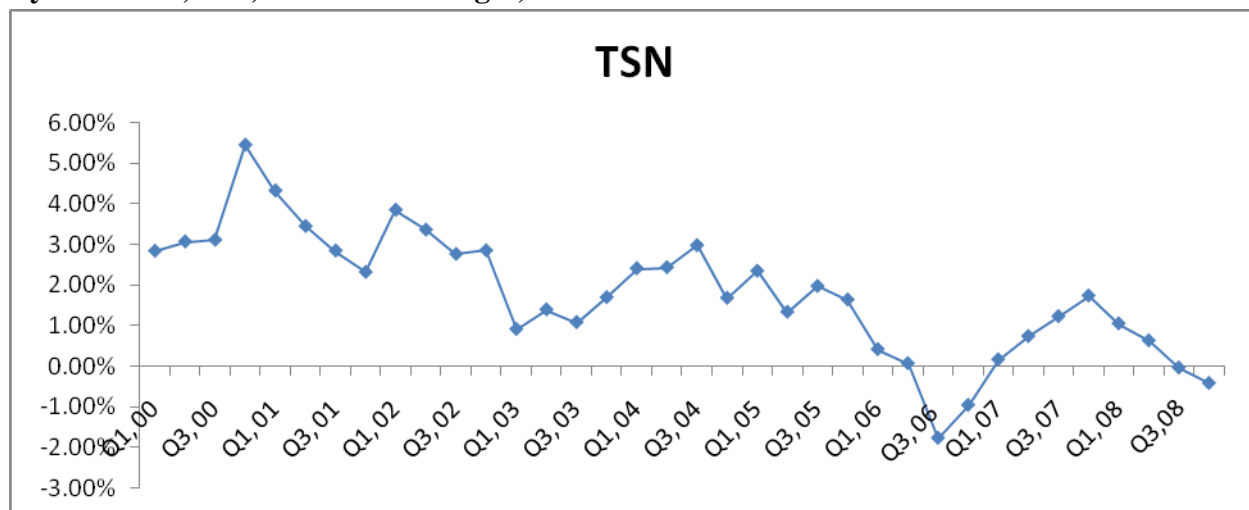
Ford Motor Co.

Graphs of free cash margin for these companies across the period studied are provided below. With each graph we also provide a short summary of the primary drivers or factors that we think were behind the observed changes in free cash margin for the selected firms. For more details regarding the industries, please refer to the separate industry research reports that accompany this report.

**Conagra Foods, Inc., Free Cash Margin, 2000 – 2008**

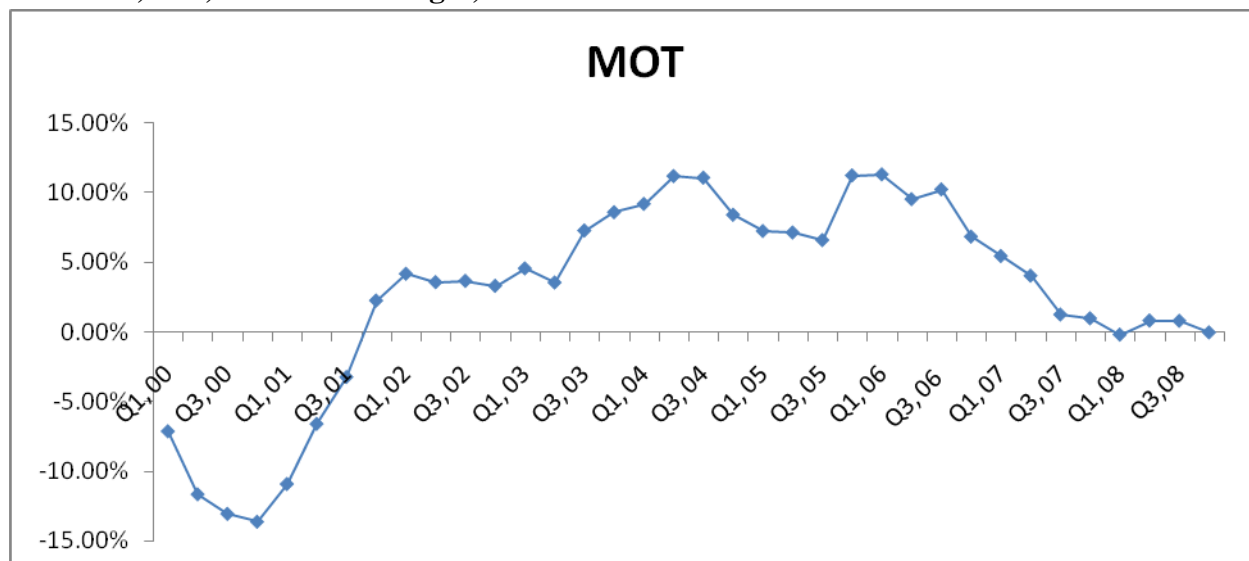
Conagra Foods, Inc. Free cash margin declined to -3.75% for the twelve months ended February 2009 from .17% for the same period in 2008. Operating cushion declined to 11.16% in 2009 from 12.89% in 2008, driven by a decline in gross margin, offset somewhat by an improvement in SG&A%. Income taxes paid increased to 4.06% from 3.62%. Aiding free cash margin was an improvement in the company's cash cycle to 65.05 days from 114.02 days and a reduction in capital expenditures to revenue, which declined from 4.10% to 3.28%.

### Tyson Foods, Inc., Free Cash Margin, 2000 – 2008



Tyson Foods, Inc. Free cash margin declined to -.41% for the twelve months ended December 2008 from 1.74% for the twelve months ended December 2007. Operating cushion declined to 3.42% in 2008 from 4.11% in 2007, driven by a decline in gross margin. The cash cycle worsened to 35.22 days from 33.03 days in 2007.

### Motorola, Inc., Free Cash Margin, 2000 – 2008

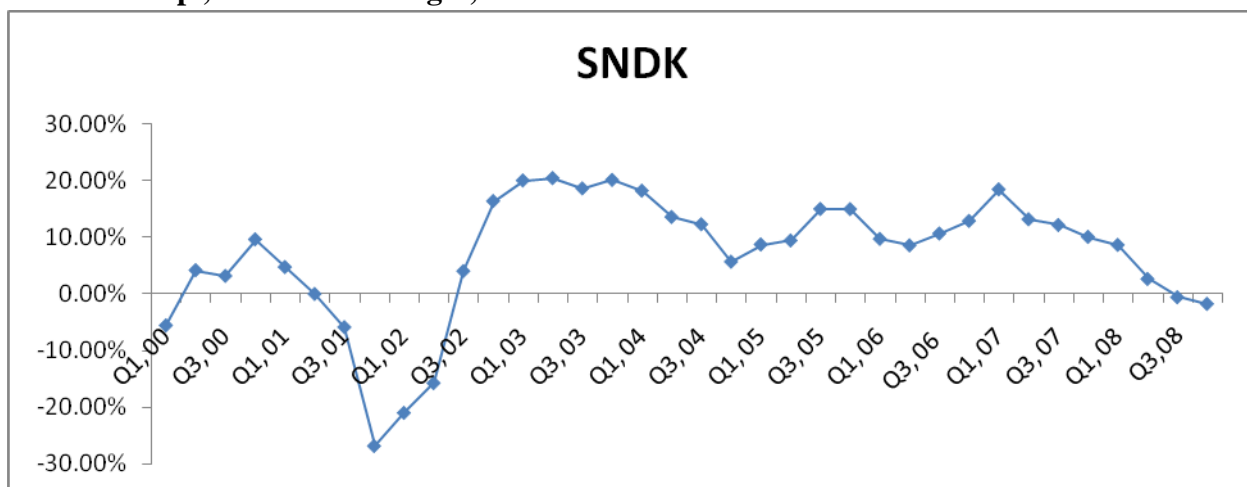


Motorola, Inc. Free cash margin declined to -.05% for the twelve months ended December 2008 from .95% for the twelve months ended December 2007. Operating cushion declined to 3.27%



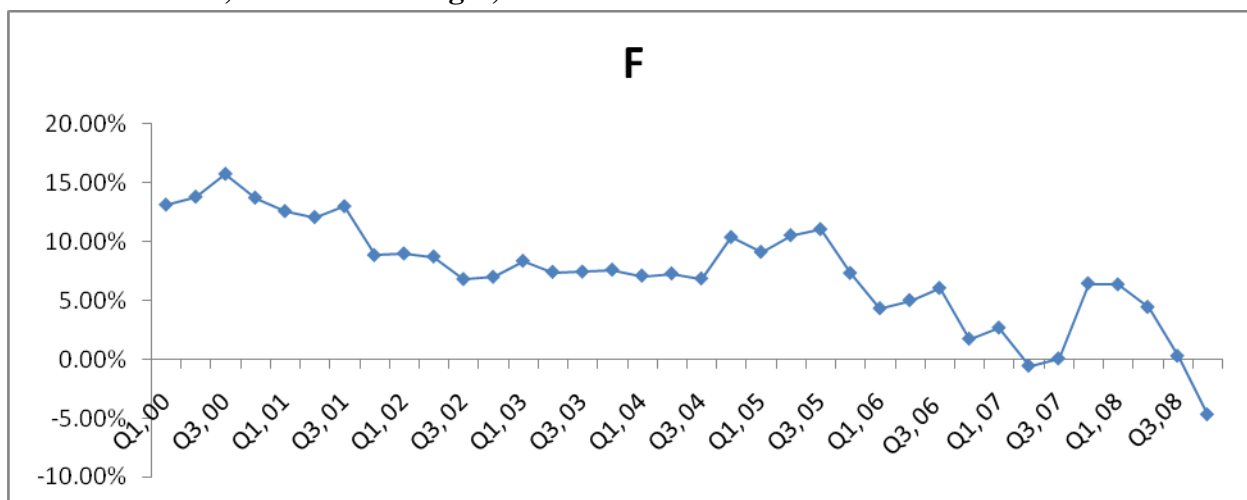
in 2008 from 4.54% in 2007, due to an increase in SG&A and R&D spending as a percent of revenue. The cash cycle improved due to an improvement in receivables days.

### Sandisk Corp., Free Cash Margin, 2000 – 2008



Sandisk Corp. Free cash margin declined to -1.72% for the twelve months ended December 2008 from 10.11% for the twelve months ended December 2007. Operating cushion worsened to -13.97% in 2008 from 17.43% in 2007, driven by a significant decline in gross margin and an increase in SG&A%. The cash cycle improved.

### Ford Motor Co., Free Cash Margin, 2000 – 2008



Ford Motor Co., Free cash margin declined to -4.70% for the twelve months ended December 2008 from 6.42% for the twelve months ended December 2007. Operating cushion declined to 6.04% in 2008 from 12.71% in 2007, driven primarily by a decline in gross margin. Income taxes paid as a percent of revenue increased. The cash cycle was steady.